

Course Syllabus — Algebra and Trigonometry — Spring 2018

Department: Mathematics and Statistics
Course Number: MAT 150 **Credit Hours:** 5
Course Section: 01 **CRN:** 10790
Time and Place: 9:30-10:20 MTWRF - FH 309 **MML Course:** thome62079
Instructor: Dr. Edward Thome
Office: FH 6C-9 **Phone:** 809-3718
email: ethome@murraystate.edu
Office Hours: 8:30 — 9:20 MTWRF
9:30 — 10:30 MT - RF and by request, when possible

Beginning with the header below is the syllabus for our course in the university syllabus format. It addresses all aspects of what comprises the course-content, what comprises the course grade and how it is computed, the important dates, and the various ‘rules’ of the course. What it doesn’t tell you is the bigger picture of what our course is to accomplish and how, the smaller picture of how our class periods will operate, or the responsibilities that each of us owe to the course and to each other.

Ideally, you will leave the course with an improved ability to reason quantitatively (even apart from the skills imparted in the course), and this will be accomplished by working together from the day before a new topic is discussed through beyond the day that the next new topic arises. Read the section “Participation Grade” to get a skeletal idea of this. Some things can be credibly accomplished by two parties without one or the other investing themselves in the enterprise, but the joint activity of teaching & learning is not one of them. For me to really say that I have given a student a chance, I need to have done all that I could to engage that student in the subject; likewise for you to really say that you have given the subject & its teacher & *yourself* a chance, you need to have done all that you could to engage the teacher and its subject. There will be times when I fall short of my end of that contract, but it won’t be because I have given up on you or on teaching but rather that time & other duties have temporarily gotten the best of me; thus, I will also understand that the same can happen with you. However, each of us should take special care that we do not find ourselves in this spot more than once or twice; we should do all we can to invest ourselves in this cooperative relationship. When we *do* fall down on our end, it is very important that we get back to the task right away—it takes both of us.

Also throughout the semester we will look at some of the nuts-and-bolts of studying mathematics. Mathematics is not read and understood in the same way as, say, history is. Therefore, each week we will look at some study skills and some mathematical study skills. It makes a big difference if we use the right tool for the job and that we actually address the right job.

Finally, the office hours are specific times which I will safeguard for working with you. However, I am also in my office many other times. You can check my calendar and if it does not show that I am elsewhere, you are free to drop in. [I’ll send you an email with these links later today, but here they are for later reference.]

<https://calendar.google.com/calendar/embed?src=ethome%40murraystate.edu&ctz=America/Chicago>
or for subscribing through your calendar:

<https://calendar.google.com/calendar/ical/ethome%40murraystate.edu/public/basic.ics>

That calendar will also show you when I had to cancel an office hour for some reason. If I am in a truly hectic time when you drop by, then I will tell you so, but otherwise we’ll address whatever questions you have.

Wishing you a great semester!
Ed Thome

DEPARTMENT: MATHEMATICS AND STATISTICS

COURSE PREFIX: MAT

COURSE NUMBER: 150

CREDIT HOURS: 5

I. TITLE:

Algebra and Trigonometry

II. COURSE DESCRIPTION AND PREREQUISITE(S):

Course is an intensive study of college algebra and trigonometry. A combination of MAT 140 and MAT 145, it is a faster-paced course for students with some familiarity with the subjects. MAT 150 may be used as a refresher course to help prepare students

for MAT 250. Restriction: A student who receives credit for MAT 150 may not receive credit for MAT 130, 140, or 145. (Credit or the combination of MAT 140 and MAT 145 will substitute for MAT 150.)

Prerequisite(s): ACT math standard score of at least 23.

III. COURSE OBJECTIVES:

The student will be able to:

- A. Demonstrate a theoretical, operational, and graphic understanding of functions including polynomial, rational, exponential, logarithmic, trigonometric;
- B. Analyze and solve application problems in algebra;
- C. Represent equations graphically through the use of graphing utility, and to integrate the algebraic and graphic interpretation of these concepts;
- D. Compute the values of the six trigonometric functions for key angles measured in both degrees and radians;
- E. Graph all six trigonometric functions and their transformations;
- F. Use the basic trigonometric identities to verify other trigonometric identities;
- G. Solve trigonometric equations;
- H. Solve right and oblique triangles;
- I. Use the concepts of trigonometry to solve applied problems.

IV. CONTENT OUTLINE:

- A. Equations, and Inequalities
- B. Graphs
- C. Functions and Their Graphs
- D. Polynomial and Rational Functions
- E. Exponential and Logarithmic Functions
- F. Trigonometric functions
- G. Acute angles and right triangles
- H. Radian measure and circular functions
- I. Graphing trigonometric functions
- J. Trigonometric identities
- K. Inverse trigonometric functions
- L. Applications of trigonometry and vectors
- M. Complex numbers and polar form

—Textbook sections 1.1-1.6, 2.1-2.3, 2.5, 3.1-3.5, 4.1, 4.2, 4.5, 4.6, 5.1-5.6, 6.1-6.6, 7.1-7.5, 8.1, 8.2, 8.4—

V. INSTRUCTIONAL ACTIVITIES:

Class periods will involve the discussion new material, the addressing of questions about the previous days' material, working in groups or alone, or an occasional quiz. There is no need to be formal or to raise your hand to ask questions. Feel free to just ask, whether I am explaining a problem or introducing new material. There is no need to feel shy about asking questions; that is the purpose of a class. Those who don't ask questions don't necessarily know more than you, they might be shy about asking questions, or they might not know what they do not know because they have not read the sections or worked any problems. Communication is the key to a productive learning—teaching relationship.

VI. FIELD, CLINICAL, AND/OR LABORATORY EXPERIENCES:

None

VII. TEXT(S) AND RESOURCES:

Algebra and Trigonometry, Graphs and Models, by Bittinger, Beecher, Ellenbogen, Penna, 6th Ed. A graphing calculator is required for portions of this course and will be necessary for exams. Acceptable models include any TI-82, TI-83, TI-84, TI-85, and TI-86. The TI-80, TI-81, TI-89, TI-92, most TI-Inspire, and TI-Voyage 200 are not allowed.

VIII. EVALUATION AND GRADING PROCEDURES:

A. The final grade in the course will be based on five regular Exams (60%), Preparation (6%), Participation (8%), Quizzes (8%), and a comprehensive Final Exam (18%), according to the Grading Scale:

Grading Scale:

| | |
|-------------|---|
| [90% ,100%] | A |
| [80% ,90%) | B |
| [70% ,80%) | C |
| [60% ,70%) | D |
| Below 60% | E |

B. **Auditing:** If you seek to change your status to audit, you must continue to do all the graded assignments, to attend classes regularly after the audit is given, to miss no more than 5 class periods total for the entire course and no more than 2 class

periods after the audit is given, and to maintain a grade of at least 70% of the grade they had upon taking the Audit. If these requirements are not followed, then an “E” will be earned for this course.

C. **Exams:** The Exams will test your comprehension of concepts and skills not covered on a previous exam. Exams may contain both problem-solving questions and essay questions. Exams occur for *everyone* (to be fair to everyone) on the scheduled date. Sometimes, however, extenuating circumstances do exist. *If you absolutely must miss an exam, you are to stop by or call me at 270-809-3718 (or leave a voicemail or a message with the office if I am not in when you call) before the exam to tell me why you cannot be at the exam.* If you do not, you will get a **zero** or that exam with no opportunity to make it up. The five regular exams will be on Tuesday February 6; Tuesday, February 27; Friday, March 16; Tuesday, April 10; Friday, April 27.

D. **Final Exam :** The Final will be a comprehensive exam covering any material addressed that semester. The Final exam will be on Tuesday, May 8 at from 8:00 - 10:00 am.

E. **Preparation:** For each new section, there will be 4-6 questions (between 1-2 listings) on MyMathLab for you to work through. The deadline will *always* be the class period at which we start discussing the section. You have just one additional day to complete it late, at a penalty of 1/3 of the score. As we get further into the course, I think that you’ll find this to be very helpful.

E. **Participation:** This is one of the most important aspects of how successful one is in this course and it is built of 2 components: in-class, and post-class. **In-class:** During a portion of almost every class we will work through example problems as I walk around and see how your work is going; this is to help get some experience with the problem-types before you go home. Full-credit depends not on being correct every time but on working vigorously on the problems as well as asking questions during class and responding to questions from me. If you do not attend then you can not do any of these things and this portion of your grade will suffer accordingly. **Post-class:** Almost every night there will be fresh homework problems to work on to develop the skills of the course. A portion of these will be collected regularly (but not necessarily every day) and graded. In addition to looking for fully-solved problems I will look for written questions which try to reach a better understanding of the exercises and how to work them.

E. **Quizzes:** There will be occasional quizzes, some announced and some not, to get some practice on solving the problems in a testing environment and to see how things are going. Any missed quizzes (even if you have an excuse) will be counted among those you are already allowed to drop and can’t be made up. I will drop from none to the lowest 20% depending on your attendance (see the attendance policy below).

F. **Important Grade-dates:** The last day to drop a course without receiving a grade (or a W) is Monday, January 22. The last day to change from Audit to Credit is Monday, January 22. The last day to drop individual courses and receive a grade of “W” is Thursday, April 19th. The last day to change from Credit to Audit is Thursday, April 19th, if you qualify for an Audit. (See the Audit policy above.)

G. **Vacation Days:** We have the following days when the university is closed: March 18-24 (Spring Break)

H. **Cellphone and Laptop usage:** Since we have limited time to work together, we need to be focused on the day’s class-work the whole time. Cellphones and Laptops are to be put away during class time; if they are in use then the participation grade will suffer *and* you’ll still have to put them away—they are a distraction to everyone.

<https://www.forbes.com/sites/maxinejoselow/2015/06/25/digital-distraction-how-phones-are-taking-over-the-classroom/3/#24cb601736dd>

and

<https://www.forbes.com/sites/kevinkruse/2013/12/26/why-successful-people-never-bring-smartphones-into-meetings/#4f08049f3ffb>

IX. ATTENDANCE POLICY: *Students are expected to adhere to the MSU Attendance Policy outlined in the current MSU Bulletins.* If you miss class you are responsible for obtaining the day’s notes and assignments. Your class attendance will negatively affect your participation grade. You are expected to attend every class period. If you miss 2 or fewer days this semester, I will drop the lowest 20 % of your quiz grades. If you miss 3 or 4 days for the semester, I will drop the lowest 10% of your quiz grades. If you miss 5 or more days this semester, no quiz grades will be dropped. To level the playing field between those who must miss classes because of MSU and those who do not, the only kind of absence which will not be counted in this regard is a university-required absence. Thus, anything else (for instance, being sick, going on a job interview, taking care of a sick relative, etc.) will count as one of these absences. *Leaving class early will count as an absence unless you provide me with a reason in advance.*

X. ACADEMIC HONESTY POLICY:

Murray State University takes seriously its moral and educational obligation to maintain high standards of academic honesty and ethical behavior. Instructors are expected to evaluate students’ academic achievements accurately, as well as ascertain that

work submitted by students is authentic and the result of their own efforts, and consistent with established academic standards. Students are obligated to respect and abide by the basic standards of personal and professional integrity.

Violations of Academic Honesty include:

Cheating - Intentionally using or attempting to use unauthorized information such as books, notes, study aids, or other electronic, online, or digital devices in any academic exercise; as well as unauthorized communication of information by any means to or from others during any academic exercise.

Fabrication and Falsification - Intentional alteration or invention of any information or citation in an academic exercise. Falsification involves changing information whereas fabrication involves inventing or counterfeiting information.

Multiple Submission - The submission of substantial portions of the same academic work, including oral reports, for credit more than once without authorization from the instructor.

Plagiarism - Intentionally or knowingly representing the words, ideas, creative work, or data of someone else as one's own in any academic exercise, without due and proper acknowledgement.

Instructors should outline their expectations that may go beyond the scope of this policy at the beginning of each course and identify such expectations and restrictions in the course syllabus. When an instructor receives evidence, either directly or indirectly, of academic dishonesty, he or she should investigate the instance. The faculty member should then take appropriate disciplinary action.

Disciplinary action may include, but is not limited to the following:

- 1) Requiring the student(s) to repeat the exercise or do additional related exercise(s).
- 2) Lowering the grade or failing the student(s) on the particular exercise(s) involved.
- 3) Lowering the grade or failing the student(s) in the course.

If the disciplinary action results in the awarding of a grade of E in the course, the student(s) may not drop the course.

Faculty reserve the right to invalidate any exercise or other evaluative measures if substantial evidence exists that the integrity of the exercise has been compromised. Faculty also reserve the right to document in the course syllabi further academic honesty policy elements related to the individual disciplines.

A student may appeal the decision of the faculty member with the department chair in writing within five working days. Note: If, at any point in this process, the student alleges that actions have taken place that may be in violation of the Murray State University Non-Discrimination Statement, this process must be suspended and the matter be directed to the Office of Equal Opportunity. Any appeal will be forwarded to the appropriate university committee as determined by the Provost.

XI. NON-DISCRIMINATION POLICY AND STUDENTS WITH DISABILITIES:

Policy Statement

Murray State University endorses the intent of all federal and state laws created to prohibit discrimination. Murray State University does not discriminate on the basis of race, color, national origin, gender, sexual orientation, religion, age, veteran status, or disability in employment, admissions, or the provision of services and provides, upon request, reasonable accommodation including auxiliary aids and services necessary to afford individuals with disabilities equal access to participate in all programs and activities. In particular and without limiting the preceding and pursuant to and consistent with the requirements of Title VI of the Civil Rights Act of 1964 and its regulations 34 CFR 100 et seq.; Section 504 of the Rehabilitation Act of 1973 and its regulations 34 CFR 104; Title IX of the Education Amendments of 1972, 20 USC 1681 et seq., and its regulations 34 CFR 106 et seq; and the Age Discrimination Act of 1975 and its regulations 34 CFR 110, Murray State University does not discriminate on the basis of race, color, national origin, sex, handicap, or age in its educational programs and activities. This non-discrimination in education programs and activities extends to employment and admissions and to recruitment, financial aid, academic programs, student services, athletics, and housing. Murray State is required by Title IX and 34 CFR part 106 not to discriminate on the basis of sex and the prohibition against sex discrimination specifically includes a prohibition of sexual harassment and sexual violence. For more information contact the Executive Director of Institutional Diversity, Equity, and Access/ Murray State University Title IX Coordinator, Murray State University, 103 Wells Hall, Murray, KY 42071 Telephone: (270) 809-3155 Fax: (270) 809-6887; TDD: (270) 809-3361; Email: msu.titleix@murraystate.edu

Students with Disabilities

Students requiring special assistance due to a disability should visit the Office of Student Disability Services immediately for assistance with accommodations. For more information, students should contact the Office of Student Disability Services, 423 Wells Hall, Murray, KY 42071. 270-809-2018 (voice) 270-809-5889(TDD). Other required departmental or collegiate committee information

[Click here to enter text.](#)

XII. Other required departmental or collegiate committee information